Amendments to the claims

1. (currently amended): Apparatus for exposing materials to microwave energy, the apparatus comprising:

   a cylindrical wall extending axially from a first end to a second end and including an interior surface and an exterior surface and defining an axis, the cylindrical wall forming a first elongated slot elongated generally axially along the cylindrical wall and extending through the cylindrical wall from ~~between~~ the interior surface to ~~and~~ the exterior surface ~~surfaces~~;

   an end plate closing off the second end of the cylindrical wall to form a cylindrical chamber;

   a first waveguide having a waveguide wall extending in length along a direction of propagation of microwave energy and forming an elongated opening in the waveguide wall along the length of the waveguide;

   wherein the first waveguide connects to the exterior surface of the cylindrical chamber with the elongated opening in the waveguide wall in communication with the first elongated slot through which the first waveguide couples microwave energy into the cylindrical chamber~~; and~~

   ~~an elongated member covered with material to be exposed to microwave energy and disposed coaxially within the cylindrical chamber~~.

2. (canceled)

3. (currently amended): Apparatus as in claim ~~1~~ 33 wherein the elongated member is a metal mandrel.

4. (currently amended): Apparatus as in claim ~~1~~ 33 wherein the distance between the interior surface of the cylindrical wall and the elongated member is substantially the same throughout the cylindrical chamber.

5. (currently amended): Apparatus as in claim ~~1~~ 33 wherein the distance between the interior surface of the cylindrical wall and the elongated member is great enough to eliminate arcing between the interior surface and the elongated member.

6. (currently amended): Apparatus as in claim ~~1~~ 33 wherein the distance between the end plate and the elongated member is great enough to eliminate arcing between the end plate and the elongated member.

7. (original): Apparatus as in claim 1 further comprising a second end plate at the first end of the cylindrical wall.

8. (currently amended): Apparatus as in claim 1 wherein the cylindrical wall further forms a second elongated slot between the interior and the exterior surfaces positioned at a circumferentially spaced location from the first elongated slot and wherein the apparatus further comprises a second waveguide forming an elongated opening along its length and connected to the exterior surface of the cylindrical chamber with the elongated opening in communication with the second elongated slot.

9. (currently amended): Apparatus as in claim 8 wherein the first and second elongated slots are formed in the cylindrical wall at diametrically opposed positions.

10. (currently amended): Apparatus as in claim 1 wherein the cylindrical wall forms four elongated slots at 90° circumferential intervals.

11. (currently amended): Apparatus as in claim 1 wherein the elongated slot has a long axis skewed relative to the axis of the cylindrical chamber.

12. (original): Apparatus as in claim 1 further comprising a mode stirrer in the cylindrical chamber at the end plate.

13. (previously presented): Apparatus as in claim 12 wherein the mode stirrer includes a rotatable shaft and a plurality of sector-shaped blades extending from the shaft.

14. (original): Apparatus as in claim 13 wherein at least some of the blades are axially offset from each other.

15. (original): Apparatus as in claim 13 wherein the blades are circumferentially offset from each other.

16. (original): Apparatus as in claim 13 wherein the planes of the blades are parallel to the end plate.

17. (original): Apparatus as in claim 13 wherein the sum of the sectors spanned by all the sector-shaped blades is less than 360°.

18. (currently amended): Apparatus as in claim 1 wherein the first waveguide is rectangular ~~with~~ and the waveguide wall comprises a pair of opposite narrow walls and a pair of opposite broad walls and wherein the elongated opening in the first waveguide is formed in one of the narrow walls.

19. (currently amended): Apparatus as in claim 1 further comprising spaced apart parallel bars extending across the elongated opening in the first waveguide.

20. (original): Apparatus as in claim 19 wherein the spacing between consecutive parallel bars is constant.

21. (original): Apparatus as in claim 19 wherein the bars are cylindrical.

22. (original): Apparatus as in claim 1 wherein the first waveguide is disposed at an angle relative to the axis of the cylindrical chamber.

23. (canceled)

24. (canceled)

25. (canceled)

26. (canceled)

27. (canceled)

28. (canceled)

29. (canceled)

30. (canceled)

31. (canceled)

32. (canceled)

33. (new): Apparatus as in claim 1 further comprising an elongated member covered with material to be exposed to microwave energy and disposed coaxially within the cylindrical chamber.